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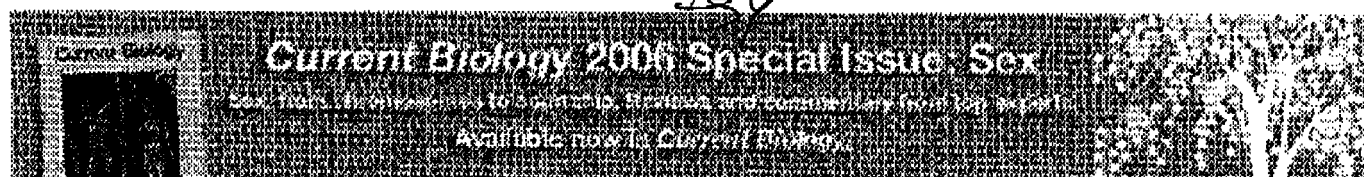
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## Preventive Veterinary Medicine

Volume 74, Issue 4, 16 June 2006, Pages 279-292

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# The effect of hen-egg antibodies on *Clostridium perfringens* colonization in the gastrointestinal tract of broiler chickens

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## Abstract

We evaluated the ability of hen-**egg antibodies** (HEA) to reduce intestinal colonization by *Clostridium perfringens* in broiler chickens. Antibodies against *C. perfringens* or cholera toxin (negative control) were obtained from the eggs of laying hens hyperimmunized using a *C. perfringens* bacterin or cholera toxin. Eggs were collected, pooled, and **egg antibodies** were concentrated by polyethylene-glycol precipitation. An initial experiment was conducted to determine the in vivo activity of the administered antibody along the length of the intestine. Thereafter, two feeding trials were performed to assess the efficacy of feed amended with the **egg antibodies** in reducing the level of colonization of *C. perfringens* in challenged birds. Antibody activity declined from proximal to distal regions of the intestine but remained detectable in the cecum. In the first experiment there was no significant reduction in the number of *C. perfringens* in the birds fed the diet amended with the anti-*C. perfringens* **egg antibody**, compared to the birds that received the anti-cholera toxin **egg antibody** ( $n = 10$ ), at any of the sampling times. In the second experiment there was a significant decrease in *C. perfringens* intestinal populations 72 h after treatment ( $n = 15$ ) as

assessed by culture-based enumeration, but there was no decrease as measured by quantitative PCR based on the *C. perfringens* phospholipase C gene. Intestinal-lesion scores were higher in the birds that received the anti-*C. perfringens* HEA. Our work suggests that administration of HEA did not reduce the level of *C. perfringens* intestinal colonization and conversely might exacerbate necrotic enteritis.

**Keywords:** Necrotic enteritis; *Clostridium perfringens*; Hen-egg antibodies

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## Vaccine

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# Effect of egg yolk antibody on experimental *Cryptosporidium parvum* infection in *scid* mice

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## Abstract

In this study the effect of chicken egg yolk «antibody (IgY)» against *Cryptosporidium parvum* infection was examined. «IgY» sample was prepared from eggs of chickens immunized with *C. parvum* oocyst antigens. In vitro, «antibody»-treated sporozoites showed reduced binding to Caco-2 cells and lost vitality. These phenomena were not observed with a control «IgY» sample prepared from eggs of non-immunized chickens. *Scid* mice orally administered with the «antibody» demonstrated partial reduction in oocyst shedding after challenge with  $10^3$  oocysts. «IgY», however, could not eliminate the infection after 17 days of continuous treatment. The potentials of using specific «IgY» for treatment and prevention of cryptosporidiosis were discussed.

**Keywords:** *Cryptosporidium parvum*; «IgY»; Passive immunization

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